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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,716	01/16/2004	Joy Sawyer Bloom	AD6950USNA	6558

23906 7590 04/05/2006

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WILMINGTON, DE 19805

EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/758,716	Applicant(s) BLOOM ET AL.	
	Examiner Jeff Wollschlager	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 2-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>042804,111904</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claim 1, in the reply filed on February 16, 2006 is acknowledged. Claims 2-4 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Specification

The disclosure is objected to because of the following informalities: There is a grammatical error in the disclosure. As found in U.S. Patent Application Publication, 2005/0082720, paragraph [0006], the word "is" is used in place of the word "it". A review of the disclosure for additional spelling or grammatical errors is required.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Eckhardt et al. (U.S. Patent 4,835,243; issued May 30, 1989).

Claim 1 is directed to a method for forming an isotropic thermotropic liquid crystalline part comprising optionally forming a molding composition of a powdered thermotropic liquid crystalline polymer and optionally one or more powdered resins and/or fillers, placing the molding composition into a mold or molding device, applying pressure and heat to melt the thermotropic liquid crystalline polymer and cooling the mold or molding device to solidify the polymer to form a solid part.

As defined in the specification, the part is deemed to be isotropic if the ratio of the coefficients of thermal expansion in two directions is about 0.60 to 1.0 when the smaller of the two values is placed in the numerator (U.S. Patent Application Publication 2005/0082720; paragraph [0023]). As further defined in the specification, an isotropic part is achieved under molding conditions that result in little or no flow of the molten polymer, such as in compression molding (paragraph [0002]).

Eckhardt et al. teach a method for forming an isotropic part from a powdered (col. 4, line 40) thermotropic liquid crystalline polymer (col. 1, lines 14-16) utilizing the method of compression molding (col. 4, lines 62-64). Eckhardt et al. do not explicitly disclose that their improved method yields an isotropic part, however, as acknowledged by the applicant in the instant disclosure, isotropic parts are achieved when thermotropic liquid crystalline polymers are compression molded. Further, the method of compression molding inherently involves placing the molding composition into a mold, applying pressure and heat to melt the polymer, and cooling the mold to solidify the polymer to form a solid part. As such, Eckhardt et al. clearly anticipate the claim.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kock et al. (EP 0 239 036; published September 30, 1987).

Claim 1 is directed to a method for forming an isotropic thermotropic liquid crystalline part comprising optionally forming a molding composition of a powdered thermotropic liquid crystalline polymer and optionally one or more powdered resins and/or fillers, placing the molding composition into a mold or molding device, applying pressure and heat to melt the thermotropic liquid crystalline polymer and cooling the mold or molding device to solidify the polymer to form a solid part.

As defined in the specification, the part is deemed to be isotropic if the ratio of the coefficients of thermal expansion in two directions is about 0.60 to 1.0 when the smaller of the two values is placed in the numerator (U.S. Patent Application Publication 2005/0082720; paragraph [0023]).

Kock et al. teach a method for producing molded structures from liquid crystalline polymers by an injection embossing process. Kock et al. employ a thermotropic liquid crystalline polymer (page 2, paragraph 2) to produce a largely isotropic molded structure (page 2, paragraph 4). In the method, the polymer is heated (page 2, paragraph 8) to melt the polymer, pressurized and ultimately cooled to solidify the part (page 2, paragraph 9). This method yields an isotropic part as defined in the instant application (page 4, second full paragraph and Table 1). It is noted that in addition to the injection embossing method taught by Kock et al. the well-known method of injection molding, as quantified in Table 1, also appears to produce an isotropic part in accord with the definition provided in the instant application ($1/1.28 = 0.78$).

Conclusion

The pending claim is rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bartlet et al. (U.S. Patent 5,100,605) teach a method for forming isotropic material from powdered thermotropic liquid crystalline polymers by extrusion.

Bross et al. (U.S. Patent 5,517,751) teach that liquid crystalline polymers may be compression molded.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JW
Jeff Wollschlager
Examiner
Art Unit 1732

March 21, 2006


MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER